VOLUME 4 AIRCRAFT EQUIPMENT AND OPERATIONAL AUTHORIZATIONS

CHAPTER 10 AUTHORIZATION TO CONDUCT FLIGHT IN REDUCED VERTICAL SEPARATION MINIMUM AIRSPACE

Section 1 Safety Assurance System: Authorization to Conduct Flight in Reduced Vertical Separation Minimum Airspace

4-1231 REPORTING SYSTEM(S).

A. Program Tracking and Reporting Subsystem (PTRS). Use PTRS activity codes: 1411, 1413, 3411, 3413, 5411, and 5413.

B. Safety Assurance System (SAS). This section is related to SAS Elements 3.2.4 (OP) RVSM Authorization, and 4.6.1 (AW) Avionics Special Emphasis Programs.

4-1232 OBJECTIVE. This chapter provides guidance for evaluating applications for an operator to conduct flight in airspace where Reduced Vertical Separation Minimum (RVSM) is applied, issuing operations specifications (OpSpecs), management specifications (MSpecs), or a Letter of Authorization (LOA), as appropriate, and maintaining authorizations. OpSpecs, MSpecs, and LOAs are issued using the Web-based Operations Safety System (WebOPSS) (see Volume 3, Chapter 18, Section 2, Automated Operations Safety System). Additionally, information regarding evaluating aircraft for RVSM compliance can be found in Volume 4, Chapter 10, Section 2.

A. Specific Authorization. An operator requires a specific authorization, as described in this chapter, when:

1) A U.S. operator's aircraft is not equipped with qualified Automatic Dependent Surveillance-Broadcast (ADS-B) Out systems;

2) U.S. aircraft operators do not routinely operate in airspace where sufficient ADS-B data is available to the Federal Aviation Administration (FAA) to determine RVSM performance; or

3) U.S. aircraft operators intend to conduct RVSM operations in foreign airspace where the State authority requires a specific RVSM operational authorization, as specified in International Civil Aviation Organization (ICAO) Annex 6, Operation of Aircraft.

NOTE: A qualified ADS-B Out system for this purpose is one that meets the performance standards in Title 14 of the Code of Federal Regulations (14 CFR) part 91, § 91.227.

NOTE: The FAA will perform height-keeping performance monitoring on ADS-B Out equipped flights at RVSM altitudes for all airspace defined in § 91.225.

B. Aircraft Equipped with ADS-B Out. Operators and certificate holders may also be authorized for RVSM operations when operating under the provisions of Part 91 Appendix G, Section 9, Aircraft Equipped with Automatic Dependent Surveillance-Broadcast Out. Operators and certificate holders seeking to operate in RVSM-designated airspace, operating RVSM-compliant aircraft equipped with qualified ADS-B Out systems, and meeting the provisions of section 9, need not make application for RVSM authority to the FAA. Refer to Advisory Circular (AC) 91-85, Authorization of Aircraft and Operators for Flight in Reduced Vertical Separation Minimum (RVSM) Airspace, and Volume 4, Chapter 10, Section 2.

4-1233 GENERAL.

A. Requirements. The current regulation in part 91 appendix G states the requirements an operator and the operator's aircraft must comply with in order for a person to operate a civil aircraft of U.S. registry in RVSM airspace.

B. Authorization. The Administrator authorizes operators to conduct flight in RVSM airspace. The criteria evaluated to issue specific authorization consists of two basic elements:

1) The operator's aircraft complies with the requirements of part 91 appendix G.

2) The operator has adopted RVSM operating policies and procedures for pilots (and, if applicable, dispatchers) acceptable to the FAA.

NOTE: Foreign commercial operators of civil aircraft of U.S. registry must comply with subparagraphs 1) and 2) above. The operating policies and procedures for pilots and dispatchers, to include training, are the responsibility of the State of the Operator. For additional guidance, see Volume 12, Chapter 2, Section 3, Part 129 Part A Operations Specifications, and Volume 12, Chapter 2, Section 6, Part 129 Part D Operations Specifications—Aircraft Maintenance.

C. Background.

1) The FAA implemented RVSM in all of the airspace in the lower 48 states, Alaska, the San Juan flight information region (FIR), Gulf of Mexico, and Atlantic High Offshore Airspace on January 20, 2005. To safely operate in RVSM airspace, all aircraft needed to be configured and inspected to ensure compliance with the applicable RVSM performance requirements.

2) Originally, operators were required to develop aircraft RVSM maintenance programs and obtain approval from the FAA. Over the last decade, RVSM operations have become the standard for aircraft operating between flight levels (FL) 290 and 410 and are no longer considered new or novel. The FAA has determined that special emphasis RVSM maintenance programs are no longer needed. RVSM continued airworthiness is ensured through design requirements such as the instructions for continued airworthiness (ICA) and aircraft airworthiness requirements. Effective August 19, 2016, operators are no longer required to submit an RVSM-Approved Maintenance Program when applying for RVSM authorization.

3) The guidelines for specific authorization (OpSpec, MSpec, or LOA) in this section recognize two key elements of any RVSM authorization—an RVSM-Compliant Aircraft (see Volume 4, Chapter 10, Section 2) and properly trained aircrew who have met applicable RVSM-Knowledgeable Pilots requirements (see subparagraph 4-1236B)—and a "decision matrix" (see paragraph 4-1237) that will allow the FAA to more efficiently direct attention to only those elements that require initial review. An RVSM-Compliant Aircraft and RVSM-Knowledgeable Pilots, as defined in the above referenced paragraphs, are also referred to in this guidance individually or together as an "RVSM Authorization Element" or the "RVSM Authorization Elements."

4) The guidelines set in this chapter are not designed to negate or replace other existing policy and guidance with respect to RVSM authorizations, but are designed to make the RVSM authorization process more efficient.

5) The guidelines set in this chapter do not negate or cause the reevaluation of any previously issued RVSM authorizations. Instead, the procedures should be adopted only as operators seek new or amended RVSM authorizations subsequent to the publication of these modified guidelines.

D. Responsibilities.

1) Using the procedures set in paragraph 4-1237, the appropriate Flight Standards District Office (FSDO), certificate-holding district office (CHDO), or International Field Office (IFO) manager, in coordination with Avionics/Maintenance/Airworthiness aviation safety inspectors (ASI) and Operations ASIs, should coordinate the evaluation of the aircraft RVSM eligibility and operator's RVSM program.

2) The Principal Avionics Inspector (PAI) or the Principal Maintenance Inspector (PMI) will make the determination of whether or not the aircraft meets the requirements of an RVSM-Compliant Aircraft.

3) The Principal Operations Inspector (POI) will evaluate and make the determination of whether the operator's pilots meet the knowledge requirements of part 91 appendix G, as defined as RVSM-Knowledgeable Pilots and further described in paragraph 4-1236.

4) The FSDO, CHDO, or IFO will issue an OpSpec, MSpec, or LOA, as appropriate, to authorize an operator to conduct flight in RVSM airspace.

NOTE: The ASI may become knowledgeable of any other existing authorizations or specifications issued to a specific aircraft using the Operator Aircraft Viewer Report, available in the WebOPSS.

5) As further described in paragraph 4-1237, the applicant will obtain and submit all documents that establish the eligibility of its aircraft as an RVSM-Compliant Aircraft. Operators are encouraged to use the RVSM Decision Matrix in Figure 4-87. Operators should contact the PAI/PMI early in the application process to discuss what documents may be needed to establish eligibility of an aircraft. The applicant will submit evidence to the FAA that he or she is capable

of operating and maintaining each aircraft or aircraft group for which he or she applies. The applicant will establish that each pilot has adequate knowledge of RVSM requirements, policies, and procedures.

4-1234 AIRCRAFT ELIGIBILITY. (See Volume 4, Chapter 10, Section 2).

4-1235 MAINTENANCE PROGRAM.

A. Application for Authorization. Effective August 19, 2016, the FAA no longer requires operators to submit an RVSM-Approved Maintenance Program when applying for RVSM authorization.

NOTE: Operators holding an authorization contingent on use of an RVSM-Approved Maintenance Program must follow that program until they obtain a new or amended authorization.

B. Removal of RVSM-Approved Maintenance Program Requirement from an Existing Authorization.

1) Operators who are not required by regulation to operate under or to hold an approved maintenance or inspection program can apply to have their RSVM authorization wording changed to remove the reference to an RVSM-Approved Maintenance Program. For instructions on processing this request, see Authorization Group I in Figure 4-87.

2) Operators who are required by rule to hold an approved maintenance or inspection program may still be able to have RVSM-specific elements removed if they are otherwise not required as an element of the approved maintenance or inspection program. Operators should follow general guidance for the modification of the maintenance or inspection program.

3) The operator should be reminded that it is still their responsibility to ensure an aircraft is Airworthy prior to operating in RVSM airspace (§§ 91.7, 91.180, and 91.706).

4-1236 OPERATOR EVALUATION.

A. Person with Operational Control to Obtain RVSM Authorization. It is the RVSM applicant's responsibility to submit a request for RVSM authorization in the name of the person who will have operational control of the aircraft. It is not the responsibility of the FSDO or a specific ASI to determine legal ownership or operational control of an aircraft with respect to an RVSM authorization, and if any question arises with respect to these issues, then the FSDO should refer such questions to the appropriate FAA Regional Counsel's office. (See Volume 3, Chapter 2, Section 2, Responsibility for Part 91 Letters of Authorization (LOA), paragraph 3-55.) The following general information, however, may be useful in assisting the FSDO, as well as an RVSM applicant, in determining if the appropriate party has been properly designated as the legal operator with respect to the RVSM authorization request:

1) For commercial and fractional ownership program operations conducted under 14 CFR parts 91 subpart K (part 91K), 125, and 135, the authorization applicant and holder should be the operating certificate holder, air carrier certificate holder, or fractional ownership

program manager, in which event the authorization will be issued in the form of an appropriate OpSpec or MSpec.

2) For noncommercial operations conducted under parts 91 and 125 (A125 Letter of Deviation Authority (LODA) holders), the authorization applicant and legal operator should normally be one of the following persons, in which event the authorization will be issued in the form of an appropriate LOA:

- A registered owner of the aircraft that is operating the aircraft incidental to its own non-air-transportation business or personal activity; or
- A person who has assumed operational control of the aircraft through a lease or use agreement for that person's operation of the aircraft incidental to that person's own non-air-transportation business or personal activity.

NOTE: The legal operator will generally not be an owner trustee that is not operating the aircraft for its own business, a management company that has not accepted a transfer of operational control from the operator, or a holding company or bank that holds title to the aircraft solely for the purpose of leasing or transferring operational control of the aircraft to other persons.

NOTE: It is both possible and common to have multiple operators for part 91, 91K, and/or 125/135 aircraft over a short period of time and on a nonexclusive basis (for example, multiple dry leases for the use of any one aircraft can be in place at one time). In such instances, each individual operator is required to have an appropriate RVSM authorization issued in its own name in order for that operator to have access to RVSM airspace.

B. RVSM-Knowledgeable Pilots. To obtain authorization from the Administrator to conduct operations in RVSM airspace, the Administrator must find the operator to have adopted RVSM operating policies and/or procedures for pilots (and, if applicable, dispatchers) and ensure each pilot has adequate knowledge of RVSM requirements, policies, and procedures ("RVSM-Knowledgeable Pilots").

1) For an applicant that is operating only under part 91, demonstrating that it has RVSM-Knowledgeable Pilots will consist of providing sufficient evidence that each pilot has an adequate knowledge of RVSM requirements, policies, and procedures, as required in part 91 appendix G, section 3(c)(2). Refer to AC 91-85, paragraph 3.3 for acceptable examples.

2) For an applicant who operates under 14 CFR part 91K, 121, 125, or 135, in addition to meeting the adequate knowledge requirements for part 91 operators, that applicant will need to provide sufficient evidence of initial and recurring pilot training and/or testing requirements, as well as policies and procedures that will allow the operator to conduct RVSM operations safely, as required in part 91 appendix G, section 3(b)(2) and (3) in order to demonstrate that they are using RVSM-Knowledgeable Pilots.

3) If (1) a subsequent applicant seeks a new authorization for the operation of an aircraft in RVSM airspace, and that operator is using pilots (and dispatchers where required) that

have been previously determined by the FAA to be RVSM-Knowledgeable Pilots; (2) the new applicant provides a written statement of compliance (SOC) documenting that the pilots they propose using still meet the requirements with respect to their status as RVSM-Knowledgeable Pilots, and that the new applicant will be conducting the same type of operations (e.g., parts 91, 91K, 121, 125, and 135) as applied to the previously adopted RVSM-Knowledgeable Pilots; and (3) no other information is provided or comes to light that calls into question whether the pilots have retained their status as RVSM-Knowledgeable Pilots for the type of operation they will conduct, then the POI should accept those pilots as meeting the RVSM-Knowledgeable Pilots requirement with respect to the new applicant.

C. Additional Requirements to Obtain Authorization. In addition to the requirements set forth in subparagraph 4-1236B, the RVSM authorization applicant must meet the following requirements:

1) The minimum equipment list (MEL), if used, must incorporate the required changes stated in Master Minimum Equipment List (MMEL) GC-59 (formerly Policy Letter (PL)-84), dated August 15, 1997.

2) The RVSM authorization applicant must provide a procedure for initial aircraft monitoring and meeting RVSM minimum monitoring requirements.

3) The RVSM authorization applicant must also provide the method the operator will use to notify the crew if the aircraft has been restricted from RVSM, but is Airworthy for an intended non-RVSM flight.

NOTE: Paragraph 4-1235 addresses how maintenance is performed. This element may be addressed through compliance with 14 CFR part 43 requirements.

D. Required Monitoring. Operators that have been issued a U.S. RVSM-specific authorization are required to have their aircraft RVSM height monitored, in accordance with the RVSM Minimum Monitoring Chart, every 2 years or within intervals of 1,000 flight-hours, whichever period is longer.

1) Operators are not required to complete the height-monitoring requirements prior to being granted operational approval. However, if operators cannot show evidence of the last successful height monitoring, or the height monitoring for the aircraft is out of date, operators have 6 months from the date the authorization is issued to meet the monitoring requirement.

2) Evidence of previous successful monitoring of an aircraft transfers to a new owner and/or operator and may be used to meet the monitoring requirements.

3) When calculating the 1,000-hour provision of the minimum monitoring requirement, the calculation of the flight time should be from the last valid monitoring date on record. Flight logbook data should be sufficient to meet this element.

E. Responsible Person for RVSM Authorizations. For part 91 RVSM applicants, the application for authorization to operate within RVSM airspace must include the designation of a

Responsible Person, and may further include the designation of a separate RVSM point of contact (POC), as follows:

1) The operator should designate a person(s) under this subparagraph E who has the legal authority to sign the RVSM authorization on behalf of the operator and who has adequate knowledge of RVSM requirements, policies, and procedures, which person may be the individual person who will be the operator, or, if the operator is a legal entity, then an officer or employee of that entity, or a separate person who that individual person or entity has contracted with in order to act on behalf of the individual person or legal entity with respect to the RVSM authorization. See Volume 3, Chapter 2, Section 2 for responsibilities related to part 91 LOAs.

2) The operator should also designate a person(s) to act as a contact person who has actual day-to-day knowledge of the RVSM-Compliant Aircraft operations and maintenance status that the FAA may contact to gather such information when such a need arises.

3) The operator may use one individual to fulfill both roles, as described in subparagraphs 1) and 2), or the operator may elect to designate separate persons to fulfill these roles.

4) Whoever the operator designates to fulfill the role described in subparagraph 1) above will be designated as the Responsible Person, and that Responsible Person will sign LOA B046, as appropriate.

5) If the operator chooses to use separate individuals, then the person fulfilling the role described in subparagraph 2) above will be designated as the "RVSM POC." In such an event, the separate person designated as the RVSM POC (i.e., someone who has not also been designated as a Responsible Person) will not have any authority to sign the RVSM authorization on behalf of the operator. Additionally, if an operator has designated a separate RVSM POC, then that is the individual the FAA should first contact with respect to the operator's RVSM-Compliant Aircraft operations and maintenance status.

6) In any event, the Responsible Person and/or the RVSM POC should be a person who has ongoing knowledge of the operations of the aircraft under the RVSM authorization.

7) Additionally, it generally is not appropriate to designate an "Agent for Service" with respect to RVSM authorizations that are being issued to part 91.

F. Coordination. The manager of the responsible Flight Standards office, in coordination with the PAI, PMI, and POI, will issue the OpSpecs, MSpecs, or LOAs after determination of an RVSM-Compliant Aircraft and acceptance of operator RVSM-Knowledgeable Pilots requirements. Upon issuance, the POI will make the appropriate PTRS entry (see Table 4-23, Activity Numbers for Section I, Block 3). Refer to AC 91-85, paragraph 3.3 for examples required for authorization submission.

NOTE: A PAI, PMI, or POI may sign OpSpecs, MSpecs, and LOAs for the manager (when authorized).

4-1237 RVSM DECISION MATRIX.

A. RVSM Applicant Procedures. Any applicant for an administrative change to an existing RVSM authorization should submit such documentation as is called for in Group I of the RVSM Decision Matrix described in subparagraph C below. Any applicant for a new RVSM authorization should submit sufficient documentation establishing that it will use an RVSM-Compliant Aircraft and RVSM-Knowledgeable Pilots. If the applicant is submitting a new application that does not rely on any previously accepted RVSM Authorization Element, then the application will be processed in accordance with Group III of the decision matrix. If the applicant seeks to rely on one or more previously accepted RVSM Authorization Elements, that applicant should review Group II of the decision matrix to determine what additional information should be provided, as applicable, with respect to the proposed use of a previously accepted RVSM Authorization Element in order to benefit from the efficiencies created by the matrix.

B. FSDO Approval Procedures. Once an applicable CHDO, FSDO, or IFO has received a written request for service from an applicant for a new RVSM authorization, that FSDO will process that request using the following general guidance:

1) Determine which of the Authorization Groups in the RVSM Decision Matrix (Figure 4-87) applies.

2) In the event an existing RVSM authorization holder seeks to move its RVSM authorization to a new controlling FSDO, or a new RVSM authorization applicant submits an application to a FSDO that includes the use of one or more existing RVSM Authorization Elements that have been previously accepted by a different FSDO, then the requested FSDO should adopt and accept those previously accepted RVSM Authorization Elements, absent any information provided as part of the application that raises questions or concerns with respect to the ongoing validity or applicability of those previously accepted RVSM Authorization Elements.

3) Although guidance has been created in order to allow for the most efficient processing of an RVSM authorization request possible without sacrificing operational safety, and a safety inspector may rely on this guidance in issuing new or amended RVSM authorizations, each FSDO, CHDO, IFO, POI, PAI, PMI, and/or ASI retains the authority to conduct as much review and research with respect to any proposed RVSM-Compliant Aircraft or RVSM-Knowledgeable Pilots requirements as warranted in order to ensure safety and regulatory compliance requirements have been met.

NOTE: It is the operator's responsibility to ensure that documentation reflects the requirements for authorization. A positive statement by the operator detailing any changes made to previously approved programs assists the inspector in determining the level of review necessary to meet the burden listed above. For example, it would be inappropriate for an operator to submit documentation containing a previous operator's name or contacts.

C. RVSM Decision Matrix. Each RVSM authorization applicant and each FSDO that has received an RVSM authorization request will use the following RVSM Decision Matrix, in

conjunction with the definitions and procedures with respect to the matrix and RVSM Authorization Elements described in paragraphs 4-1234, 4-1235, and 4-1236, in order to request and process the applicable RVSM authorization application.

Figure 4-87. RVSM Decision Matrix

RVSM DECISION MATRIX	
AUTHORIZATION GROUP I: **RVSM AUTHORIZATION AMENDMENTS** • The following changes are considered to be administrative in nature only. • This group only applies in circumstances where a previously authorized RVSM operator and each of the previously accepted RVSM Authorization Elements *are remaining the same.*	
I.	**A. Examples of Requested Action/Nature of Change**
	1. Change in the primary business address of an RVSM-Compliant Aircraft and/or RVSM authorization holder. 2. Change in an existing RVSM operator's designated Responsible Person (or RVSM-Authorized Representative or RVSM Point of Contact (POC)). 3. Change in the registration markings of an RVSM-Compliant Aircraft being operated by an existing RVSM authorization holder. 4. Removal of wording describing use of an RVSM-Approved Maintenance Program for operators otherwise not having a requirement for an approved maintenance program. 5. Removal of an RVSM-Compliant Aircraft from an existing RVSM authorization that has multiple RVSM-Compliant Aircraft listed.
I.	**B. Applicable Steps and Information Required from RVSM Authorization Holder**
	1. Prior to making a request for service for an authorization amendment, each existing authorization holder should make a positive determination as to which portions of the previously accepted RVSM Authorization Elements the authorization holder is requesting to change.

	2. That authorization holder should then submit a written request to the controlling FSDO, CHDO, or IFO that: a. States which of the applicable administrative changes are occurring; b. Further affirmatively states that none of the previously accepted RVSM Authorization Elements that formed the basis for the initial issuance of the affected RVSM authorization have changed or are changing; and c. Requests the issuance of an amendment to the existing RVSM authorization that acknowledges the administrative change being made. 3. If the nature of the requested amendment is to change the primary business address from one FSDO, CHDO, or IFO service area to another, he or she must notify, in writing, the losing (previously responsible) FSDO, CHDO, or IFO of the new physical location and mailing address within 30 calendar-days following relocation. The losing FSDO, CHDO, or IFO must request that the WebOPSS Help Desk move the operator's database to the appropriate receiving FSDO, CHDO, or IFO. The losing FSDO, CHDO, or IFO must also notify the receiving FSDO, CHDO, or IFO of the change. The receiving FSDO, CHDO, or IFO should then update and reissue the operator's A001 template to reflect the new address, and the receiving FSDO, CHDO, or IFO becomes the responsible FSDO, CHDO, or IFO for processing new LOAs for that operator. 4. The authorization holder should also provide such further information as the FSDO, CHDO, or IFO may request in order to efficiently process the request.
I.	**C. Applicable Procedures to be Followed by the Appropriate FSDO, CHDO, or IFO**
	1. Review the request and supporting documentation received from the RVSM authorization applicant to determine if it appears that an amended RVSM authorization amendment is warranted. 2. Reissue the amended RVSM authorization that is identical to the initial RVSM authorization in all respects other than reflecting the new amended information. 3. If the nature of the requested amendment is to change the primary business address from one FSDO service area to another, see the additional applicable guidance in Volume 3, Chapter 2, Section 2, Responsibility for Part 91 Letters of Authorization (LOA). 4. If an existing RVSM authorization holder has made a written affirmation that none of the underlying previously accepted RVSM Authorization Elements has changed or will change, and there is no other information provided to the FSDO raising any questions or concerns with respect to the ongoing validity or applicability of those RVSM Authorization Elements, then, subject to subparagraph 4-1237B3), the FSDO, CHDO, or IFO should issue the requested amendment without further inspections being required.

AUTHORIZATION GROUP II:

RVSM AUTHORIZATION BASED ON ONE OR MORE EXISTING APPROVED RVSM AUTHORIZATION ELEMENTS

- The following RVSM authorizations are new authorizations.
- This group will normally apply to a new or proposed RVSM operator that is seeking the issuance of an RVSM authorization for an aircraft that is already an RVSM-Compliant Aircraft and/or previously accepted RVSM-Knowledgeable Pilots requirements with respect to its operations of that specific aircraft.

II.	**A. Examples of Requested Action/Nature of Change**
	1. There is a change in the legal status or identity of the business entity that is the Approved RVSM Operator, but the Responsible Person, RVSM Authorized Representative, and/or RVSM Contact Person and each of the Approved RVSM Authorization Elements are remaining the same. a. One example of this situation may occur where an operator is converted from an S-corporation to a limited liability company under applicable state law, but no other changes are occurring. b. Another example may occur where the ownership and operation of an aircraft is transferred from one company to a legal affiliate, but there are no other changes occurring. 2. A new proposed RVSM operator will be using an existing RVSM-Compliant Aircraft and/or previously accepted RVSM-Knowledgeable Pilots requirements. Examples of this type of situation may include: a. An operator takes delivery of a newly manufactured aircraft that is type certified (TC) as RVSM-compliant. b. An Approved RVSM Aircraft is being operated under an RVSM authorization issued to a 14 CFR part 135 air carrier, and the underlying owner or a separate lessee will occasionally use that specific aircraft and/or the same RVSM-Knowledgeable Pilots requirements. c. A group of underlying owners or lessees uses an RVSM-Compliant Aircraft, each maintaining their own operational control of that aircraft pursuant to a dry lease and/or the same RVSM-Knowledgeable Pilots requirements.

	1. An existing or newly proposed Approved RVSM Operator seeks an RVSM authorization and will be utilizing one or more existing Approved RVSM Authorization Elements. a. An example may be where an existing RVSM operator seeks to add a new proposed RVSM-Compliant Aircraft to an existing RVSM authorization where that operator will continue to use previously accepted RVSM-Knowledgeable Pilots requirements.
II.	**B. Applicable Steps and Information Required from RVSM Authorization Applicant**
	1. Make a positive determination that the existing or newly proposed RVSM operator is seeking an RVSM authorization that will utilize at least one previously Approved RVSM Authorization Element (i.e., an existing RVSM-Compliant Aircraft and/or RVSM-Knowledgeable Pilots requirements). 2. Submit a written request to the controlling FSDO, CHDO, or IFO that: a. Provides complete documentation of an RVSM compliance program, including written information evidencing that the specific aircraft meets the requirements of an RVSM-Compliant Aircraft; b. Further specifically states that previously accepted RVSM-Knowledgeable Pilots requirements will be used with respect to the operation of the proposed Approved RVSM Aircraft in RVSM airspace, as applicable; c. Provides such additional information as necessary to evidence compliance with new or different RVSM-Knowledgeable Pilots requirements (or to be able to gain such approvals); and d. Asks for the issuance of an RVSM authorization that applies to the operation of the aircraft by that proposed RVSM operator. 3. Provide such further information as the FSDO, CHDO, or IFO may request in order to efficiently process the request.
II.	**C. Applicable Procedures to be Followed by the Appropriate FSDO, CHDO, or IFO**
	1. Review the request and supporting documentation received from the RVSM authorization applicant to determine if it appears that the requested RVSM authorization is warranted. 2. To the extent the RVSM applicant has provided written documentation evidencing that the operator will be using a previously accepted RVSM Authorization Element, and accept that RVSM Authorization Element as a valid basis for the issuance of the new RVSM authorization, and to the extent the applicant has presented a proposed RVSM

	Authorization Element that has not been previously reviewed and accepted, conduct such additional review and research with respect to that RVSM Authorization Element only as is required to issue the new RVSM authorization. 3. If an RVSM applicant has made a written affirmation that one or more of the underlying previously accepted RVSM Authorization Elements have not changed or will not change, there is no other information provided to the FSDO, CHDO, or IFO raising any questions or concerns with respect to the ongoing validity or applicability of those RVSM Authorization Elements, and the applicant has otherwise presented sufficient evidence of compliance with the requirements of the remaining RVSM Authorization Elements, then, subject to subparagraph 4-1237B3), the FSDO, CHDO, or IFO should issue the requested amendment without further inspections being required.
AUTHORIZATION GROUP III: **RVSM AUTHORIZATION NOT BASED ON ONE OR MORE EXISTING RVSM AUTHORIZATION ELEMENTS** • In the event a proposed new or existing Approved RVSM Operator seeks the issuance of an RVSM authorization that will not be based on any existing RVSM Authorization Element, then neither Authorization Group I nor II above will apply. The proposed Approved RVSM Operator should submit sufficient evidence to show his or her ability to comply with each of the RVSM Authorization Elements, and the FSDO, CHDO, or IFO should process the request as a new and unique request by reviewing all of the materials provided by the applicant to ensure that each of the RVSM Authorization Elements have been met.	

4-1238 COORDINATION REQUIREMENTS. This task requires coordination between Airworthiness and Operations ASIs.

4-1239 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- Title 14 CFR Parts 43, 91, 91K, 121, 125, 135, and 145.
- AC 91-85, Authorization of Aircraft and Operators for Flight in Reduced Vertical Separation Minimum (RVSM) Airspace.

B. Forms. None.

C. Job Aids:

- Element Design Assessment (EDA) 4.6.1 (AW) Avionics Special Emphasis Programs.
- RVSM PTRS Data Entry Job Aid (see Figure 4-88).

4-1240 PROCEDURES.

A. Accepting a Previously Approved RVSM Authorization Element. If accepting a previously Approved RVSM Authorization Element in accordance with Figure 4-87, the inspector will enter the appropriate PTRS activity code (nn13) and document the acceptance of a previously approved Authorization Element in the comments section.

B. Determination of Aircraft Compliance. Determine if the aircraft meets the requirements of part 91 appendix G, section 2 and is RVSM-compliant (see Volume 4, Chapter 10, Section 2).

C. Revision of RVSM-Approved Maintenance Program Requirements in an Existing Authorization. Review the operator's maintenance program requirements. RVSM-Approved Maintenance Program requirements listed on the authorization may be removed, as described in subparagraph 4-1235B.

D. Evaluate RVSM-Knowledgeable Pilots. Determine if the operator meets the operational elements of part 91 appendix G (see paragraph 4-1236).

4-1241 TASK OUTCOMES.

A. Determine Aircraft RVSM Compliance.

1) If it is determined that an aircraft is RVSM-compliant, the PAI or PMI will complete the PTRS record with the date of modification or RVSM compliance date in the "Comments" field and will notify the applicant in writing. The activity code for this work function will be 3411 (Maintenance) or 5411 (Avionics) for initial airframe acceptance (determination of compliance).

2) If it is determined that an aircraft is not RVSM-compliant, advise the operator/applicant by letter of the determination with an explanation.

B. Removal of RVSM-Approved Aircraft Maintenance Program Wording.

1) Upon revision of an existing authorization to remove the RVSM-Approved Maintenance Program, the PAI or the PMI will make an entry in the PTRS and notify the applicant. The activity code for this work function will be 3413 (Maintenance) and 5413 (Avionics).

2) If it is determined that elements of an existing RVSM maintenance program must be incorporated into an operator's approved inspection or maintenance program, those elements must be added to the operator's program before the RVSM authorization revision is completed. The PAI or PMI will identify and record the approval date of the program revision in the PTRS entry.

4-1242 PTRS DATA ENTRY JOB AID FOR RVSM.

A. RVSM PTRS Data Entry Job Aid. Figure 4-88 is a job aid that is intended to aid inspectors in making PTRS data entries for RVSM and standardize RVSM PTRS data. The use of the PTRS is essential for management of the various RVSM databases. The entities responsible for these databases may not have access to SAS. However, routine RVSM surveillance for parts 121 and 135 operators is captured in SAS.

1) Aircraft Status for RVSM Monitoring. Many operators have aircraft monitored immediately after the completion of RVSM-required modifications and/or inspections. The information in the job aid will enable the Separation Standards Analysis Branch (ANG-E61) to confirm that the aircraft was RVSM-compliant when the RVSM monitoring flight was conducted. The responsibilities of ANG-E61 are detailed below.

NOTE: It is imperative that inspectors update the PTRS in a timely manner.

2) RVSM Approvals Database. The ANG-E61 team at the William J. Hughes Technical Center (WJHTC) retrieves PTRS information to maintain a database of U.S. RVSM aircraft and operator approvals. This database is used to complete RVSM safety assessment and safety oversight tasks. The data is used with periodic traffic samples to identify unapproved operations in RVSM airspace. The database is also forwarded to international bodies tasked with tracking RVSM aircraft/operator approval and conducting safety analyses.

NOTE: This information is being used to find and investigate aircraft that fly at RVSM FLs, but are not RVSM-approved. The database of RVSM approvals is not, however, used in real-time to grant or deny clearance into RVSM airspace.

B. Separate PTRS Entries. Inspectors must make PTRS entries as follows:

1) When the inspector determines that operator aircraft are RVSM-compliant, the inspector must update the PTRS in accordance with Section IV of the job aid shown in Figure 4-88.

2) For aircraft manufactured RVSM compliant, the Aircraft Flight Manual (AFM) and/or Type Certificate Data Sheet (TCDS) will show RVSM compliance. In accordance with Table 4-23 and Figure 4-88, the date entered will be the date that the aircraft Airworthiness Certificate was issued.

3) When OpSpecs or an LOA is issued, the inspector must update the PTRS.

4) The inspector must update “other” actions. “Other” actions include, but are not limited to:

- N-number change;
- Withdrawal of RVSM approval due to transfer of airframe to a different operator;
- Investigation of height-keeping error report (altimetry system error report (ASE-R));

- Notification from operator of successful height monitoring to comply with the RVSM minimum monitoring requirements;
- Removal of RVSM-Approved Maintenance Program requirements; and/or
- Request from operator to terminate LOA or OpSpec RVSM authorization when operator intends to continue operation of ADS-B Out compliant aircraft.

NOTE: When combining multiple actions into one PTRS entry, clearly explain in the comments all actions taken.

NOTE: When multiple aircraft are involved (such as removal of maintenance program or LOA/OpSpec authorization) individual entries must be made with Block 14, Aircraft Reg #, and Block 20, Make, Model, and Series (M/M/S), completed.

C. Fax or Email to ANG-E61. If there are questions in regard to PTRS inputs, inspectors can contact the U.S. Operator/Aircraft RVSM Approvals Database and Monitoring Manager, John Warburton, by:

- Phone: 609-485-6603,
- Fax: 609-485-5078, or
- Email: john.warburton@faa.gov.

D. System Update. The FSDO, certificate management office (CMO), or IFO will update the system, as a minimum, with the specific items listed in Table 4-23 and Figure 4-88.

E. Specific Entries for the RVSM PTRS Data Entry Job Aid. Inspectors should enter the information below in the sections of the data sheet as shown:

1) Section I—Transmittal RVSM Approval.

a) Block 3, Activity Number: See Table 4-23.

b) Block 4, 14 CFR: 91, 91K, 121, 125, or 135.

c) Block 11, Designator: 4-letter code for parts 91, 91K, 121, 125, and 135 operators.

d) Block 14, Aircraft Reg #: Aircraft registration number.

e) Block 20, Make, Model, and Series (M/M/S): Aircraft M/M/S.

f) Block 24, Non-Cert Activity Name/Company: Aircraft operator name. (Required only for part 91 operators. Prohibited for parts 121, 125, and 135 operators.)

g) Block 42, National Use: RVSM.

2) Section III—Equipment. Block 55, Aircraft Serial Number.

3) Section IV—Method of Compliance/Comments. Section IV of Figure 4-88 provides inputs for the primary area, key words, opinion code, and text.

NOTE: The first three rows of Section IV provide options to describe the work accomplished to bring the aircraft into RVSM compliance. The inspector should complete the line that best describes the action taken.

Table 4-23. Activity Numbers for Section I, Block 3

	Inspector Determination of Aircraft Reduced Vertical Separation Minimum (RVSM) Compliance	**RVSM Maintenance Program Related Revision**	**Letter of Authorization (LOA), Management Specification (MSpec), or Operations Specification (OpSpec) Granted**	**Other Actions**
Operations Activity Code	None	None	1411	1413
Airworthiness Activity Code	3411	3413	3413	3413
Avionics Activity Code	5411	5413	5413	5413

Figure 4-88. RVSM PTRS Data Entry Job Aid

RVSM PTRS Data Entry Job Aid			
Section I—Transmittal RVSM Approval			
(1) Inspector Name Code: (initials)			
(2) Record ID: (generated by system)	(3) Activity Number: See Table 4-23.	(4) 14 CFR: (91/91K/121/125/135)	
(5) NPG: (not used)	(6) Status:	(7) Callup Date: (not used)	
(8) Start Date: (as appropriate)	(9) Results: (as appropriate)	(10) Closed Date: (as appropriate)	
(11) Designator: (4-letter code for part 91/91K/121/125/135)	(12) Affiliated Designator: (not used)	(13) OTNA: (not used)	
(14) Aircraft Reg #:	(15) Location /Departure Point: (not used)	(16) Location/Arrival Point: (not used)	
(20) Make, Model, and Series (M/M/S):		(21) Incident #: (not used)	
(24) Non-Cert Activity Name/Company: (aircraft operator name, part 91, or A125 LODA only.)		(25) Accident #: (not used)	
(40) Local Use:	(41) Regional Use:	(42) National Use: (RVSM)	
Section III—Equipment			
Manufacturer (53)	Model (54)	Serial # (55)	Remarks (23 Characters) (56)

Section IV—Method of Compliance/Comments			
(57) Primary Area	(58) Key Word	(59) Opinion Code	(60) Text
F or G	617	I	*Option 1. Service Bulletin(s) (SB), Other Document Scenario.* Date (mmddyyyy) aircraft modified and/or inspected per SBs (number(s)) or other approved RVSM document(s) by (name) repair station or other modification facility.
F or G	617	I	*Option 2. STC(s) Scenario.* Date (mmddyyyy) aircraft modified/inspected per STC(s) (number(s)) by (name) repair station or other modification facility.
F or G	617	I	*Option 3. Aircraft Manufactured RVSM-Compliant.* Date (mmddyyyy) aircraft Airworthiness Certificate issued.
F or G	617	I	*FSDO or CMO Determination of Aircraft RVSM Compliance.* Date (mmddyyyy) FSDO, CMO, or IFO inspector determined aircraft to be RVSM-compliant, including TCAS II Version 7.0 incorporated (if aircraft TCAS II equipped).
F or G	643	I	*RVSM Maintenance Program Revision.* Date (mmddyyyy). RVSM maintenance program revision, or Approved RVSM Maintenance Program requirement removed from authorization Date (mmddyyyy).
B	643	I	*LOA Number and Dates.* Date (mmddyyyy) LOA issued.
B	643	I	*D098 Date.* Date (mmddyyyy) issued and date expires (mmddyyyy).
A or B	643	I	*Operations Comments.* For example: Name of agent for service; company phone number; other.
A or B	643	I	*Avionics and/or Maintenance Comments.*
A or B	719	I	*LOA, MSpec, or OpSpecs Withdrawal.* LOA or OpSpecs withdrawn on date (mmddyyyy) due to (reason).
(61) Date: Originator: Office: Inspector Signature: Supervisor Initials:			

4-1243 INVESTIGATION OF ASE-Rs.

A. General.

1) Safe operation within RVSM airspace requires measurement of aircraft altitudes within stringent tolerances. Differences, known as altimetry system error (ASE), occur between the altitude indicated by the altimeter and the actual pressure altitude corresponding to the undisturbed ambient pressure at which the aircraft is operating. Since the altimeter displays a level that includes ASE, the presentation to the pilot, air traffic control (ATC), and Airborne Collision Avoidance Systems (ACAS) is not the actual height of the aircraft. These errors are not apparent during flight operations. To be compliant with regulatory standards for RVSM operation, the ASE of an aircraft must be minimized and meet the standards of part 91 appendix G. Aircraft with observations of ASE greater than the standard listed are candidates for removal from RVSM and subject to immediate action.

2) Continued safe RVSM operations require a high level of accuracy from altimetry systems; therefore, ongoing system performance monitoring, as well as individual aircraft performance monitoring, is necessary to ensure that safety goals and requirements are met. In order to support monitoring needs in accordance with international standards, requirements, and recommended practices, the FAA deployed seven ground-based height monitoring units, also known as Aircraft Geometric Height Measurement Element (AGHME) systems, in the North American Region. These monitoring systems were strategically placed in high traffic flow areas and continuously record aircraft performance data over their geographic locations. Additionally, airplanes equipped with ADS-B Out equipment meeting the standards of Technical Standard Order (TSO)-C166, Extended Squitter Automatic Dependent Surveillance-Broadcast (ADS-B) and Traffic Information Service-Broadcast (TIS-B) Equipment Operating on the Radio Frequency of 1090 Megahertz (MHz), version 2, report the necessary parameters for monitoring. The FAA uses this information for monitoring of ASE while airplanes are in RVSM airspace within the U.S. coverage area.

3) Aircraft are monitored by the AGHME systems or ADS-B Out data processing, and those found to exhibit large ASE, with a magnitude greater than 200 feet, are investigated by the WJHTC Quality Control Team in conjunction with the North American Approvals Registry and Monitoring Organization (NAARMO). This group determines if an ASE-R should be generated to notify the operator and Flight Technologies and Procedures Division and the Aircraft Maintenance Division that an aircraft is exhibiting unsatisfactory height-keeping performance.

B. Responsibilities.

1) The NAARMO, administered through ANG-E61, will:

a) Generate an ASE-R if an aircraft exhibits deteriorating performance and/or ASE greater than 200 feet;

b) Notify and coordinate the ASE-R with the Flight Technologies and Procedures Division and Aircraft Maintenance Division and the operator’s CHDO;

c) Track the ASE-R progress and evaluate followup monitoring as required;

d) Notify the operator’s CHDO and the Flight Technologies and Procedures Division and Aircraft Maintenance Division of satisfactory or unsatisfactory followup monitoring results via the resolution sufficient or resolution insufficient letters; and

e) Close the report with a resolution sufficient letter upon acceptable monitoring and forward to the CHDO, Flight Technologies and Procedures Division, and Aircraft Maintenance Division.

NOTE: Aircraft performance with ASE greater than the standards listed in part 91 appendix G may warrant consideration of immediate suspension of RVSM operations until further investigation can be conducted. In this situation, coordinate with the Flight Technologies and Procedures Division, the Aircraft Maintenance Division, and the operator’s CHDO.

2) Flight Standards will:

a) Conduct a joint ASE-R review between the Flight Technologies and Procedures Division and the Aircraft Maintenance Division and notify the Air Transportation Division, or the General Aviation and Commercial Division, as applicable;

b) Coordinate with the NAARMO and the operator's CHDO to assist the operator in developing a corrective plan of action;

c) Track the ASE-R progress as required; and

d) In the case of unsatisfactory resolution, or ASE greater than the standards listed in part 91 appendix G, coordinate with the operator's CHDO to determine if suspension of RVSM operations is warranted.

NOTE: In cases where corrective actions taken in accordance with ICA fail to provide positive results, the type certificate holder (TCH) or Supplemental Type Certificate (STC) holder may be consulted. This coordination should involve the respective Aircraft Evaluation Group (AEG) and Aircraft Certification Office (ACO).

3) The CHDO PAI will:

a) Upon notification of an ASE-R, open a PTRS record using guidance in the RVSM PTRS Data Entry Job Aid (Figure 4-88). The following additional data field accuracy is critical for RVSM performance trend analysis:

- Section I, block 3. 5413.
- Section I, block 40. ASE-R.
- Section III. Give detailed information on components that caused the ASE.
- Section IV, block 60. Begin detailed comments with the full ASE-R number.

b) Notify the operator of the ASE-R and, if necessary, coordinate with NAARMO, the Flight Technologies and Procedures Division, the Aircraft Maintenance Division, and the operator to assist in developing an operator corrective plan. The plan is expected within 15 business-days of operator notification.

c) Review and, if satisfactory, accept the operator's corrective plan. The operator has 30 business-days from plan acceptance for corrective action to occur.

d) Submit the ASE-R Resolution Form to the Flight Technologies and Procedures Division and the Aircraft Maintenance Division.

e) Monitor the ASE-R's progress. If the initial results are satisfactory, forward the NAARMO resolution sufficient letter to the operator. If the resolution is unsatisfactory,

coordinate with NAARMO and the Flight Technologies and Procedures Division and the Aircraft Maintenance Division to determine the next action.

f) Close the PTRS record upon completion of satisfactory performance.

NOTE: All suspensions of RVSM operations due to ASE-R monitoring should be coordinated with the Flight Technologies and Procedures Division and the Aircraft Maintenance Division with input from NAARMO.

RESERVED. Paragraphs 4-1244 through 4-1260.